

Sphaerocerinae and Copromyzinae (Sphaeroceridae, Diptera) from the Oriental Region

by

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With 14 figures

ABSTRACT

Sphaerocera pseudomonilis asiatica ssp. n. (Pakistan) and *Copromyza norrbomi* sp. n. (Nepal, W. Bengal) are described. Locality data of other six species from Pakistan are given.

INTRODUCTION

The sphaerocerid fauna of the Oriental Region has been very little known. After a pioneer work of DEEMING (1969) on the Sphaeroceridae of Nepal, HACKMAN (1977) published a catalog of the species listing 67 species, which included numerous widespread or synanthropic species; according to Hackman's catalog 49 species were described from the Oriental Region before 1975 (and some species from the Western Pacific which occur also in the Oriental Region). In the last decade several publications, incl. some revisions were published by J. Roháček, S. Marshall, A. L. Norrbom and K. C. Kim, and L. Papp, which included also descriptions of Oriental species but we can still state that this region has remained the least known one among the big zoogeographical regions in our aspect. This is partly (or mainly) a consequence of the difficulties in collecting in the countries of the Oriental and thus the number of the newly collected specimens is very much limited. This is why the materials collected by the entomologists of the Muséum d'Histoire naturelle Genève, Drs C. Besuchet, I. Löbl and D. H. Burckhardt, by means of various

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collecting methods but mainly by sifting and funnelling in Pakistan, Nepal, India and Thailand, have a special value to science.

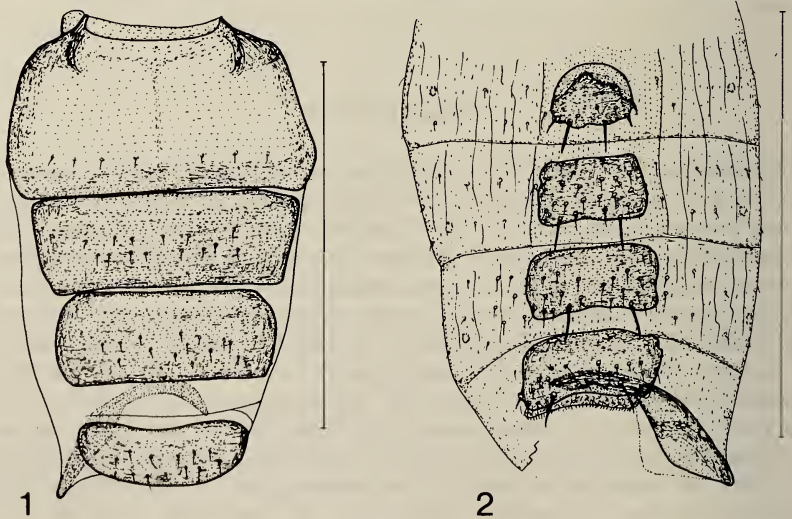
The sphaerocerids (ca. 600 specimens) were selected out of all those materials by the present author in the course of study trips to Geneva, the specimens of the known species have partly been identified and all the sphaerocerid materials will be elaborated by the above mentioned people in several future papers. As for an introductory part, eight species of the subfamilies Sphaerocerinae and Copromyzinae are published here with two new taxa.

***Sphaerocera pseudomonilis asiatica* ssp. n.**

Measurements in mm: body length 2.10 (holotype, measured along its downcurving abdomen), 1.81-1.95 (paratype ♂♂), 1.81-2.14 (paratype ♀♀), wings 2.22×0.76 (holotype), $1.89-2.06 \times 0.67-0.74$ (paratype ♂♂), $1.97-2.22 \times 0.76-0.81$ (paratype ♀♀).

Body dark greyish brown, fore leg more or less shining black, fore coxae and trochanters light brown (ochreous at palest), basal 3/5-2/3 of mid femora light brown, basal 1/3-2/5 of hind femora light brown, too.

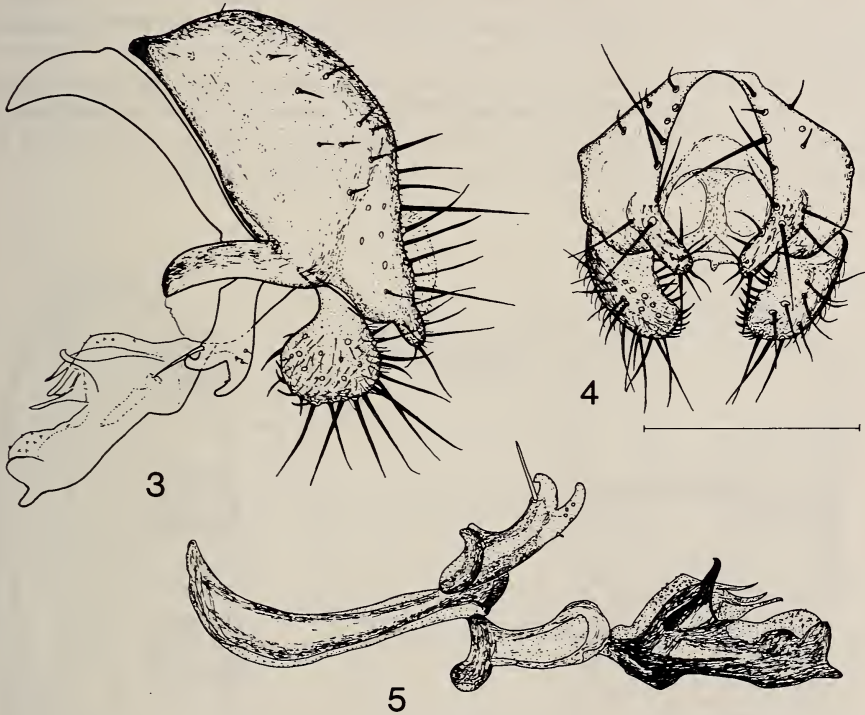
Head pollinose, except for the shining black frontal lunule, face and genae. Antennae in deep facial cavities. Cephalic bristles reduced, 5-7 pairs of minute interfrontals. Eyes ovoid, 0.23 mm long, 0.19 mm wide (ratio: 41:34), genae at narrowest 0.157 mm. Arista bare and 0.89 mm long (paratype ♂). Clypeus strong, 0.045 mm wide. Palpi pale ochreous. Vibrissae long and strongly curved, tip from a distance of 0.225 mm to base, a long adjacent peristomal.



FIGS 1, 2.

Sphaerocera pseudomonilis asiatica ssp. n., paratype male, 1: preabdominal tergites; 2: preabdominal sternites (scales: 1.0 mm).

Mesonotum subshining, covered with dark grey pruinosity. Two rows each of minute acrostichal and dorsocentral setulae. Scutellum ca. 0.39 mm wide at base and 0.20 mm long with a pair of inclinate, thick thorn-like warts laterally. Legs without any modification, femora not thickened, e.g. male fore femur 0.81 mm long and 0.18 mm thick in one of the paratypes; legs far longer than in *S. monilis*: in one male with 0.72 mm long thorax hind femur is 0.94 mm, hind tibia is 0.84 mm long. Hind metatarsus flat, 0.247×0.10 mm, ventroapical spur on hind tibia 0.11 mm. Wing membrane light ochreous with ochreous veins, costa brown to dark brown. Cs2 0.90 mm, Cs3 0.41 mm (ratio: 2.20), Cs4 0.264 mm (Cs3: Cs4 = 1.55), ta-tp 0.34 mm, tp 0.15 mm, ta-tp/tp = 2.26 (61: 27), distal section of cubital vein 0.21 mm (see Fig. 10). Halteres pale yellow.



FIGS 3-5.

Sphaerocera pseudomonilis asiatica ssp. n., paratype male, 3: genitalia in lateral view (details of genital complex omitted); 4: cerci and gonostyli in caudal view; 5: genital complex (scale: 0.20 mm for all).

Abdominal syntergite 1+2 grey pollinose leaving only a free narrow lateral and caudal subshining band, tergites 3-5 shining with a narrow subcranial pollinose band each, which extend to the medial 2/3 of tergites. Shape of tergites as given in Fig. 1 (males) and Fig. 6 (females). Preabdominal sternites much reduced and slightly asymmetrical in males (Fig. 2), even smaller in females (Fig. 7) and distinctly different from those of *S. pseudomonilis hallux* Roháček and Florén, 1987 (see also below).

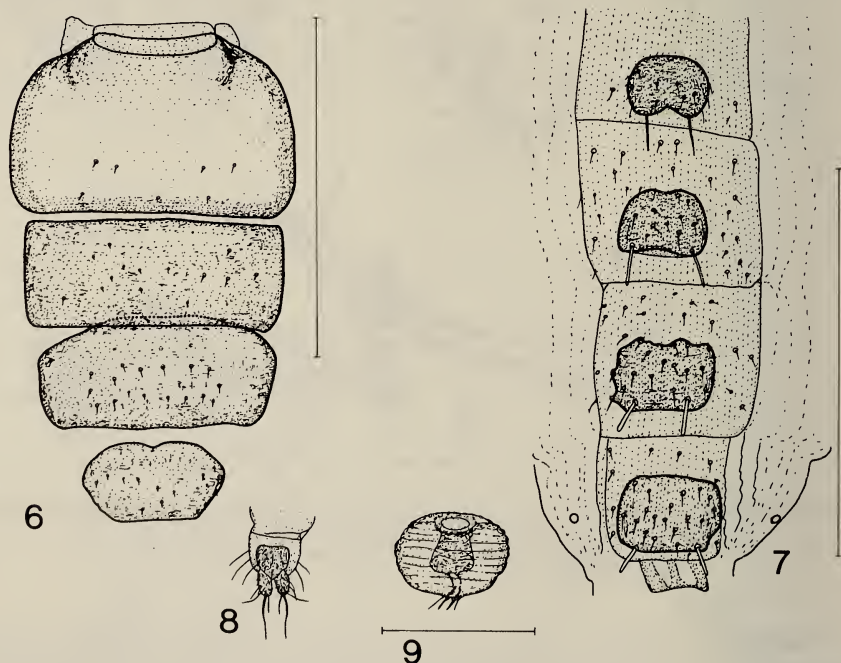
Male genitalia (Figs 3, 4, 5) largely similar to those of *S. p. pseudomonilis* Nishijima and Yamazaki, 1984 and to those of *S. p. hallux* Roháček and Florén, 1987 (see all in ROHÁČEK AND FLORÉN, 1987), but gonostylus wide and rounded apically (Fig. 3) i.e. more similar to *p. hallux* than to *p. pseudomonilis*, postgonite distinctly longer than in *p. hallux* (Fig. 5, cf. Roháček and Florén), cerci thicker but somewhat shorter, and also gonostylus seems shorter than in the other two forms (Fig. 4).

Female cerci with a pair of moderately long wavy bent hairs (Fig. 8) and with some other shorter hairs. Spermathecae (Fig. 9) as in *S. p. hallux*.

HOLOTYPE male: Pakistan, Swat, Marghuzar 1300 m, 8.V.1983, C. Besuchet-I. Löbl (No. 2b: «tamisage de feuilles mortes au pied de platanes, 1300 m»).

PARATYPES: 7♂, 6♀: data same as for holotype; 1♀: ibid. (No. 2a); 1♂: ibid., 11.V. (No. 7b); 2♂, 1♀: Pakistan, Hazara, Naran-Kaghan, 2300 m, 2.VI.1983, Besuchet-Löbl (No. 34b).

The type-specimens were minutia-pinned from alcohol. The holotype and the majority of the paratypes are deposited in the collection of the Muséum d'Histoire naturelle Genève, four male and two female paratypes are in the collection of the Zoological Department, Hungarian Natural History Museum, Budapest.

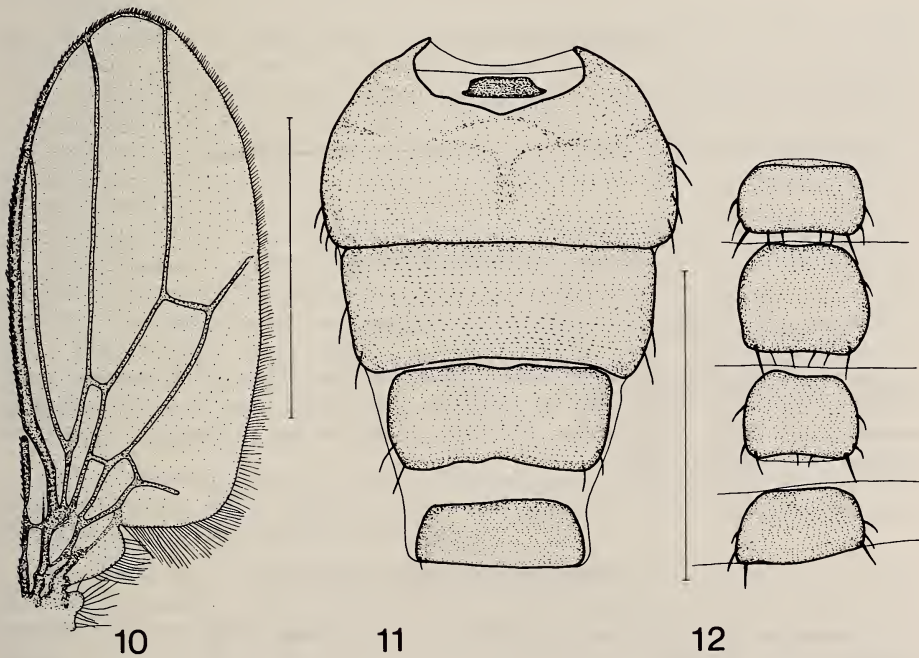


FIGS 6-9.

Sphaerocera pseudomonilis asiatica ssp. n., paratype female, 6: preabdominal tergites; 7: preabdominal sternites; 8: cerci in dorsal view; 9: spermatheca (scales: 1.0 mm for Fig. 6 and for Figs 7, 8, respectively, 0.10 mm for Fig. 9).

Other material studied: *Sphaerocera pseudomonilis hallux* Roháček et Florén, 1987, paratype male: "S: SÖ: Saltsjöbaden, Älgö RN 1014i4-4- Grass refuse pit fall 28.VI.1983 lg. F. Florén". *Sphaerocera pseudomonilis* Nishijima et Yamazaki, 1984: 2♂, 2♀, det. T. Hayashi: 1♂: Japan: Shibusawa, Mt. Tanzawa, Kanagawa, 1985.VII.12. T. Hayashi: 1♂: Mt. Myoko, Niigaza, 29.VI-2.VII.1984, T. Hayashi, leaf litter; 1♀: Hokkaido, Obihiro, 1982.VI.11. T. Hayashi — sheep manure; 1♀: Japan, Kiyosato, Nagano, June 29.1984, T. Hayashi — leaf litter.

Remarks: *S. pseudomonilis asiatica* ssp. n. is obviously closely related to *S. pseudomonilis* (Japan) and to its subspecies, *S. p. hallux*, described most recently from Sweden. Though the specimens from Pakistan are markedly smaller than the other two forms (1.81-2.14 mm, vs. 2.5-3 mm and 2.5-2.74 mm) and the abdominal sternites have a different form, our knowledge is still much limited having no data on the occurrence of similar forms in the huge areas between Japan and Sweden, Japan and Pakistan, respectively; consequently, the taxonomic status of the three forms may change in the future. The gonostylus of the new subspecies is similar to that of *S. p. hallux* but different from *S. pseudomonilis* (for some other differences see above).



FIGS 10-12.

Sphaerocera pseudomonilis asiatica ssp. n., paratype male, 10: wing; *Copromyza norrbomi* sp. n., holotype male; 11: preabdominal tergites; 12: preabdominal sternites (scales: 1.0 mm).

Sphaerocera curvipes Latreille, 1805

Pakistan, leg. C. Besuchet et I. Löbl, 1983: 1♂: Utrot, 13.V. (No. 11c); 3♂, 1♀: Madaglasht, 26.V. (No. 27b); 7♂, 3♀: Kalam, 12.V. (No. 9b); 1♂: Lawarai Pass, 21.V. (No. 21e). —

A coprophagous species with wide ecological valence, which has become nearly cosmopolitan by the human activity. Known from Japan (NISHIJIMA AND YAMAZAKI 1984) but hitherto not reported from the Oriental Region (see HACKMAN 1977).

Lotobia pallidiventris (Meigen, 1830)

Pakistan, leg. C. Besuchet et I. Löbl, 1983: 1♂: Kalam, 12.V. (No. 9b). —

A stereotypic misbelief that this is a "cosmopolitan" species was repeated last time by NISHIJIMA AND YAMAZAKI, 1984. Contrarily, reliable data on its occurrence are only from the Palaearctic Region (incl. Japan) (PAPP 1978, 1984) and from Nepal (DEEMING 1969, HACKMAN 1977). New for Pakistan.

Ischiolepta loebli Roháček et Papp, 1984

Pakistan, leg. C. Besuchet et I. Löbl, 1983: 2♀: Malam Jabba, 18.V. (No. 17b). —

Described from North India (Uttar Pradesh), new for Pakistan.

Ischiolepta orientalis (de Meijere, 1908)

Pakistan, leg. C. Besuchet et I. Löbl, 1983: 1♂: Marghuzar, 8.V. (No. 2b). —

Known from Java (HACKMAN 1977), India, Vietnam (PAPP 1978) and Sri Lanka (ROHÁČEK AND PAPP 1984), new for Pakistan. One female from Japan, identified as *orientalis* with doubt by ROHÁČEK AND PAPP (1984), belongs probably to *I. yezoensis* Nishijima et Yamazaki, 1984.

Lotophila atra (Meigen, 1830)

Pakistan, leg. C. Besuchet et I. Löbl, 1983: 1♂, 1♀: Malam Jabba, 9.V. (No. 9c); 1♂: Madaglasht, 27.V. (No. 28b). —

A widespread Holarctic coprophagous species; common in most parts of the Palaearctic (PAPP 1984), known from Japan (HAYASHI 1985, NISHIJIMA AND YAMAZAKI 1984), from China, USA, Canada and Mexico (NORRBOM AND KIM 1984). New for Pakistan and for the Oriental Region (cf. HACKMAN 1977).

***Crumomyia annulus* (Walker, 1849)**

Pakistan, leg. C. Besuchet et I. Löbl, 1983: 1 ♀: Malam Jabba, 9.V. (No. 4c). —

NORRBOM AND KIM (1985b) published an excellent paper on the World species of *Crumomyia*, where the taxonomic revision of this species and its occurrence data were also included: besides data from Alaska and Canada it was reported from Kamchatka and Japan. New for the Oriental Region and for Pakistan.

***Copromyza norrbomi* sp. n.**

Measurements in mm: body length 3.05 (holotype), 3.48 (paratype), wings 2.84×1.24 (holotype), 2.95×1.36 (paratype).

Male.

Length of head 0.65 mm, height 0.59 mm, completely pruinose except for a big shiny area extending to cheeks, i.e. genal pruinosity similar to that of Fig. 10 of Norrbom and Kim (1985a). Frons with red M-shaped area, frontal triangle shining black. Longitudinal axis of eye 0.39 mm (holotype), smallest genal width 0.175 mm. Arista 0.81 mm (holotype), 0.89 mm (paratype), short pubescent. Head bristles as in its congeners, short, 2 short *ors*, genal bristle not developed, vibrissa ca. 0.31 mm.

Thorax almost entirely black, shiny area of anepisternum nearly covers the whole sclerite. Thoracic bristles short, only 1 pair of *dc*, 2 medial rows of acrostichals. Scutellum without additional scutellars. Legs, incl. tibiae and tarsi, much thickened, e.g. hind femur 1.51×0.257 mm. Fore femur completely pruinose. Femora black except for apices and a ventral light reddish yellow spot each on apical half of mid femora and apical 1/3 of fore and hind femora. Tibiae and tarsi reddish to brownish yellow. Mid tibia almost without characteristic bristles: a minute apicoventral, a very small anterodorsal each at apical 3/4 and subapically and an almost dorsal one at apical 9/10. Wings clear yellowish, veins ochreous brown, costa somewhat darker, crossveins not darkened. Halteres yellow.

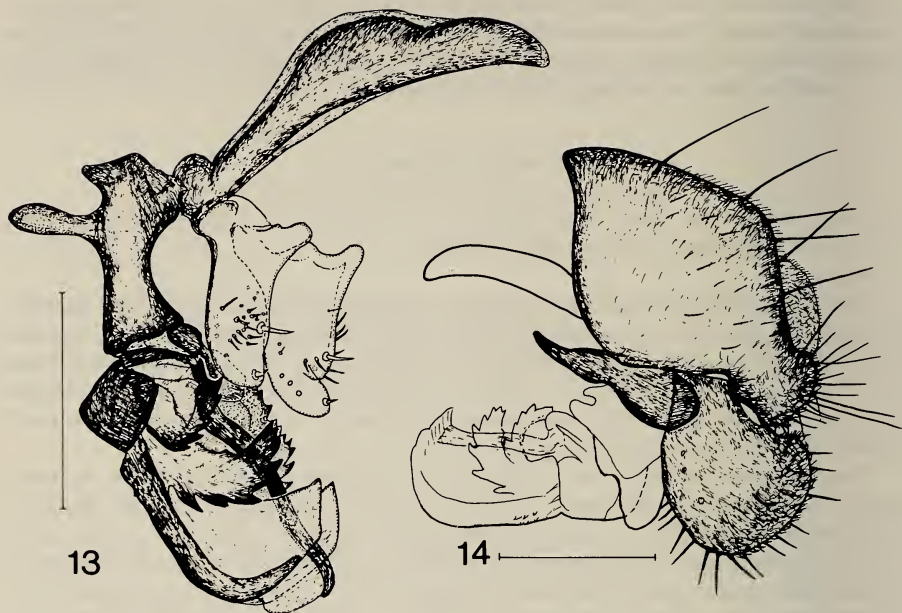
Abdominal syntergite 1 + 2 with a weak medial ridge (Fig. 11), tergite 5 half as wide, sternites (Fig. 12) comparatively wide, sternite 5 less than twice wider than long. Genital arch (Fig. 14) with long bristles, surstylus (gonostylus) large and wide, postgonite (Fig. 13) blunt with numerous short setulae, its central bristle weak. Distiphallus (Fig. 13) characterized by a central rod and two pairs of large, strongly chitinized, serrated processes.

Female unknown.

HOLOTYPE male: India, W. Bengal, Darjeeling distr., Tonglu, 3100 m, 16.X.1978, Besuchet-Löbl (No. 16b: "Tonglu sommet et près du sommet, tamisage dans une petite forêt et au pied d'arbustes dans le pâturage").

PARATYPE male: Nepal (Prov. Bagmati), below Thare Pati, 3500 m, 21.IV.1981, Löbl et Smetana (No. 21: "au-dessous Thare Pati, tamisage de feuilles mortes et de mousses dans une forêt d'érables"). The type-specimens were minutia pinned from alcohol, before pinning abdomens were removed, prepared, studied and now they are preserved in Andersson's microvial in glycerene. The holotype is deposited in the collection of the Muséum d'Histoire naturelle Genève, the paratype is in the collection of the Zoological Department, Hungarian Natural History Museum, Budapest. The paratype is damaged, right third antennal segment missing, most of head and thoracic bristles are lost.

I dedicate this new species to Dr. Allen L. Norrbom (Washington).



FIGS 13-14.

Copromyza norrbomi sp. n., holotype male, 13: genital complex in sublateral view; 14: genitalia in lateral view (details of genital complex omitted) (scales: 0.20 mm).

REMARK: This new species runs to couplet 7 in the key of NORRBOM AND KIM (1985a) for the species of *Copromyza* but its anepisternum is almost completely bare and its scutellum has no additional setae to marginal ones, i.e. it does not fit completely in that key. Nevertheless, it seems close to *C. pappi* Norrbom and Kim, 1985 but its surstylus has a different form (shorter and without basal extension), its genital complex is also similar but clearly different (Fig. 13, cf. Fig. 12 of NORRBOM AND KIM, 1985a).

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